

SEQUENCE LISTING

<110> Tang, Y. Tom

Zhou, Ping

Goodrich, Ryle

Liu, Chenghua

Asundi, Vinod

Ren, Feiyan

Zhao, Qing A.

Yang, Yonghong

Wehrman, Tom

Drmanac, Radoje T.

<120> Novel Nucleic Acids and
Polypeptides

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<150> 09/560,875

<151> 2000-04-27

<150> 09/496,914

<151> 2000-02-03

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| acaacc | atg aat gag cca cta gac tat tta gca aat gct tct gat ttc | | | | 588 |
| | Met Asn Glu Pro Leu Asp Tyr Leu Ala Asn Ala Ser Asp Phe | | | | |
| 1 | 5 | 10 | | | |
| ccc gat tat gca gct gct ttt gga aat tgc act gat gaa aac atc cca | | | | | 636 |
| Pro Asp Tyr Ala Ala Ala Phe Gly Asn Cys Thr Asp Glu Asn Ile Pro | | | | | |
| 15 | 20 | 25 | 30 | | |
| ctc aag atg cac tac ctc cct gtt att tat ggc att atc ttc ctc gtg | | | | | 684 |
| Leu Lys Met His Tyr Leu Pro Val Ile Tyr Gly Ile Ile Phe Leu Val | | | | | |
| 35 | 40 | 45 | | | |
| gga ttt cca ggc aat gca gta gtg ata tcc act tac att ttc aaa atg | | | | | 732 |
| Gly Phe Pro Gly Asn Ala Val Val Ile Ser Thr Tyr Ile Phe Lys Met | | | | | |
| 50 | 55 | 60 | | | |
| aga cct tgg aag agc agc acc atc att atg ctg aac ctg gcc tgc aca | | | | | 780 |
| Arg Pro Trp Lys Ser Ser Thr Ile Ile Met Leu Asn Leu Ala Cys Thr | | | | | |
| 65 | 70 | 75 | | | |
| gat ctg ctg tat ctg acc agc ctc ccc ttc ctg att cac tac tat gcc | | | | | 828 |
| Asp Leu Leu Tyr Leu Thr Ser Leu Pro Phe Leu Ile His Tyr Tyr Ala | | | | | |
| 80 | 85 | 90 | | | |
| agt ggc gaa aac tgg atc ttt gga gat ttc atg tgt aag ttt atc cgc | | | | | 876 |
| Ser Gly Glu Asn Trp Ile Phe Gly Asp Phe Met Cys Lys Phe Ile Arg | | | | | |
| 95 | 100 | 105 | 110 | | |
| ttc agc ttc cat ttc aac ctg tat agc agc atc ctc ttc ctc acc tgt | | | | | 924 |
| Phe Ser Phe His Phe Asn Leu Tyr Ser Ser Ile Leu Phe Leu Thr Cys | | | | | |
| 115 | 120 | 125 | | | |
| ttc agc atc ttc cgc tac tgt gtg atc att cac cca atg agc tgc ttt | | | | | 972 |
| Phe Ser Ile Phe Arg Tyr Cys Val Ile Ile His Pro Met Ser Cys Phe | | | | | |
| 130 | 135 | 140 | | | |
| tcc att cac aaa act cga tgt gca gtt gta gcc tgt gct gtg gtg tgg | | | | | 1020 |
| Ser Ile His Lys Thr Arg Cys Ala Val Val Ala Cys Ala Val Val Trp | | | | | |
| 145 | 150 | 155 | | | |
| atc att tca ctg gta gct gtc att ccg atg acc ttc ttg atc aca tca | | | | | 1068 |
| Ile Ile Ser Leu Val Ala Val Ile Pro Met Thr Phe Leu Ile Thr Ser | | | | | |
| 160 | 165 | 170 | | | |

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|---|------|
| acc aac agg acc aac aga tca gcc tgt ctc gac ctc acc agt tcg gat Thr Asn Arg Thr Asn Arg Ser Ala Cys Leu Asp Leu Thr Ser Ser Asp 175 180 185 190 | 1116 |
| gaa ctc aat act att aag tgg tac aac cta att ttg act gca act act Glu Leu Asn Thr Ile Lys Trp Tyr Asn Leu Ile Leu Thr Ala Thr Thr 195 200 205 | 1164 |
| ttg cct ccc ctt ggt gat agt gac act ttg cta tac cac gat tat cca Leu Pro Pro Leu Gly Asp Ser Asp Thr Leu Leu Tyr His Asp Tyr Pro 210 215 220 | 1212 |
| cac tct gac cca tgg act gca aac tga cagct gccttaagca gaaaggcacga His Ser Asp Pro Trp Thr Ala Asn * 225 230 | 1264 |
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|--|-----------|

| | |
|--|-----|
| gct gca ctg gac cca gcc tac acc acc ctg gaa ttt gag aat gtg cag Ala Ala Leu Asp Pro Ala Tyr Thr Thr Leu Glu Phe Glu Asn Val Gln 20 25 30 | 153 |
|--|-----|

| | |
|--|-----|
| gtg ttg acg atg ggc aat gac acg tcc cca tca gaa ggc acc aac ctc Val Leu Thr Met Gly Asn Asp Thr Ser Pro Ser Glu Gly Thr Asn Leu 35 40 45 | 201 |
|--|-----|

| | |
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| aac gcg ccc aac agc ctg ggt gtc acg gcc ctg tgt gcc atc tgc ggg Asn Ala Pro Asn Ser Leu Gly Val Ser Ala Leu Cys Ala Ile Cys Gly 50 55 60 | 249 |
|--|-----|

| | |
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| gac cgg gcc acg ggc aaa cac tac ggt gcc tcg acg tgt gac ggc tgc Asp Arg Ala Thr Gly Lys His Tyr Gly Ala Ser Ser Cys Asp Gly Cys 65 70 75 80 | 297 |
|---|-----|

| | |
|--|-----|
| aag ggc ttc ttc cgg agg agc gtg cgg aag aac cac atg tac tcc tgc Lys Gly Phe Phe Arg Arg Ser Val Arg Lys Asn His Met Tyr Ser Cys 85 90 95 | 345 |
|--|-----|

| | |
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| aga ttt agc cgg cag tgc gtg gac aaa gac aag agg aac cag tgc | 393 |
|---|-----|

| | | | |
|---|-----|-----|------|
| Arg Phe Ser Arg Gln Cys Val Val Asp Lys Asp Lys Arg Asn Gln Cys | | | |
| 100 | 105 | 110 | |
| cgc tac tgc agg ctc aag aaa tgc ttc cgg gct ggc atg aag aag gaa | | | 441 |
| Arg Tyr Cys Arg Leu Lys Lys Cys Phe Arg Ala Gly Met Lys Lys Glu | | | |
| 115 | 120 | 125 | |
| gcc gtc cag aat gag cg gac cg atc agc act cga agg tca agc tat | | | 489 |
| Ala Val Gln Asn Glu Arg Asp Arg Ile Ser Thr Arg Arg Ser Ser Tyr | | | |
| 130 | 135 | 140 | |
| gag gac agc agc ctg ccc tcc atc aat gcg ctc ctg cag gcg gag gtc | | | 537 |
| Glu Asp Ser Ser Leu Pro Ser Ile Asn Ala Leu Leu Gln Ala Glu Val | | | |
| 145 | 150 | 155 | 160 |
| ctg tcc cga cag atc acc tcc ccc gtc tcc ggg atc aac ggc gac att | | | 585 |
| Leu Ser Arg Gln Ile Thr Ser Pro Val Ser Gly Ile Asn Gly Asp Ile | | | |
| 165 | 170 | 175 | |
| cg gcg aag aag att gcc agc atc gca gat gtg tgt gag tcc atg aag | | | 633 |
| Arg Ala Lys Lys Ile Ala Ser Ile Ala Asp Val Cys Glu Ser Met Lys | | | |
| 180 | 185 | 190 | |
| gag cag ctg ctg gtt ctc gtt gag tgg gcc aag tac atc cca gct ttc | | | 681 |
| Glu Gln Leu Leu Val Leu Val Glu Trp Ala Lys Tyr Ile Pro Ala Phe | | | |
| 195 | 200 | 205 | |
| tgc gag ctc ccc ctg gac gac cag gtg gcc ctg ctc aga gcc cat gct | | | 729 |
| Cys Glu Leu Pro Leu Asp Asp Gln Val Ala Leu Leu Arg Ala His Ala | | | |
| 210 | 215 | 220 | |
| ggc gag cac ctg ctg ctc gga gcc acc aag aga tcc atg gtg ttc aag | | | 777 |
| Gly Glu His Leu Leu Leu Gly Ala Thr Lys Arg Ser Met Val Phe Lys | | | |
| 225 | 230 | 235 | 240 |
| gac gtg ctg ctc cta ggc aat gac tac att gtc cct cgg cac tgc ccg | | | 825 |
| Asp Val Leu Leu Leu Gly Asn Asp Tyr Ile Val Pro Arg His Cys Pro | | | |
| 245 | 250 | 255 | |
| gag ctg gcg gag atg agc cgg gtg tcc ata cgc atc ctt gac gag ctg | | | 873 |
| Glu Leu Ala Glu Met Ser Arg Val Ser Ile Arg Ile Leu Asp Glu Leu | | | |
| 260 | 265 | 270 | |
| gtg ctg ccc ttc cag gag ctg cac atc gat gac aat gag tat gcc tac | | | 921 |
| Val Leu Pro Phe Gln Glu Leu His Ile Asp Asp Asn Glu Tyr Ala Tyr | | | |
| 275 | 280 | 285 | |
| ctc aaa gcc atc atc ttc ttt gac cca gat gcc aag ggg ctg agc gat | | | 969 |
| Leu Lys Ala Ile Ile Phe Phe Asp Pro Asp Ala Lys Gly Leu Ser Asp | | | |
| 290 | 295 | 300 | |
| cca ggg aag atc aag cgg ctg cgt tcc cag gtg cag gtg agc ttg gag | | | 1017 |
| Pro Gly Lys Ile Lys Arg Leu Arg Ser Gln Val Gln Val Ser Leu Glu | | | |
| 305 | 310 | 315 | 320 |
| gac tac atc aac gac cgc cag tat gac tcg cgt ggc cgc ttt gga gag | | | 1065 |
| Asp Tyr Ile Asn Asp Arg Gln Tyr Asp Ser Arg Gly Arg Phe Gly Glu | | | |

| 325 | 330 | 335 | |
|---|-----|-----|--|
| ctg ctg ctg ctg ccc acc ttg cag agc atc acc tgg cag atg atc Leu Leu Leu Leu Pro Thr Leu Gln Ser Ile Thr Trp Gln Met Ile 340 | 345 | 350 | 1113 |
| gag cag atc cag ttc atc aag ctc ttc ggc atg gcc aag att gac aac Glu Gln Ile Gln Phe Ile Lys Leu Phe Gly Met Ala Lys Ile Asp Asn 355 | 360 | 365 | 1161 |
| ctg ttg cag gag atg ctg ctg gga ggg tcc ccc agc gat gca ccc cat Leu Leu Gln Glu Met Leu Leu Gly Gly Ser Pro Ser Asp Ala Pro His 370 | 375 | 380 | 1209 |
| gcc cac cac ccc ctg cac cct cac ctg atg cag gaa cat atg gga acc Ala His His Pro Leu His Pro His Leu Met Gln Glu His Met Gly Thr 385 | 390 | 395 | 1257 |
| aac gtc atc gtt gcc aac aca atg ccc act cac ctc agc aac gga cag Asn Val Ile Val Ala Asn Thr Met Pro Thr His Leu Ser Asn Gly Gln 405 | 410 | 415 | 1305 |
| atg tgt gag tgg ccc cga ccc agg gga cag gca gcc acc cct gag acc Met Cys Glu Trp Pro Arg Pro Arg Gly Gln Ala Ala Thr Pro Glu Thr 420 | 425 | 430 | 1353 |
| cca cag ccc tca ccg cca ggt ggc tca ggg tct gag ccc tat aag ctc Pro Gln Pro Ser Pro Pro Gly Gly Ser Gly Ser Glu Pro Tyr Lys Leu 435 | 440 | 445 | 1401 |
| ctg ccg gga gcc gtc gcc aca atc gtc aag ccc ctc tct gcc atc ccc Leu Pro Gly Ala Val Ala Thr Ile Val Lys Pro Leu Ser Ala Ile Pro 450 | 455 | 460 | 1449 |
| cag ccg acc atc acc aag cag gaa gtt atc tag caagccgc tggggcttgg Gln Pro Thr Ile Thr Lys Gln Glu Val Ile * 465 | 470 | 475 | 1500 |
| gggctccact ggctcccccc agccccctaa gagagcacct ggtgatcacg tggcacggc aaaggaagac gtgatgccag gaccagtccc agagcaggaa tggaaaggat gaaggccccg agaacatggc ctaagggccca catccactg ccaccccttga cgcctgctc tggataacaa gactttgact tggggagacc tctactgcct tggacaactt atctcatgtt gaagccactg ccttcacctt cacccatc catgtccaaac ccccgacttc atccaatgg acagccgcct ggagatgact tgaggcctta cttaaaccctaa gctcccttct tccctagcct ggtgcttctc ctctccttagc ccctgtcatg gtgtccagac agagccctgt gaggctgggt ccaattgtgg cacttggggc accttgctcc tccttctgct gctgccccca cctctgctgc ctccctctgc tgtcaccttg ctcagccatc ccgtcttctc caacaccacc tctccagagg ccaaggaggc cttggaaacg attcccccaag tcattctggg aacatgttgt aagcactgac tgggaccagg | | | 1560 1620 1680 1740 1800 1860 1920 1980 2040 2100 |

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 aggccaggca ctgaagggtt taagtccctt ggggctggat tccgccttcc ggctttccc 180
 agaccccaaga gccggccctt ggaacactgc agtcctgagc tctggg atg gag ccc 235
 Met Glu Pro
 1

gag act gcg ctg tgg ggc ccg gat ctg cag ggt ccg gaa cag agc ccc 283
 Glu Thr Ala Leu Trp Gly Pro Asp Leu Gln Gly Pro Glu Gln Ser Pro
 5 10 15

aac gat gct cac aga ggt gcc gag agt gaa aac gaa gag gag agc cct 331
 Asn Asp Ala His Arg Gly Ala Glu Ser Glu Asn Glu Glu Ser Pro
 20 25 30 35

cggtttttttt gttttttttt gttttttttt gttttttttt gttttttttt gttttttttt 379
 Arg Gln Glu Ser Ser Gly Glu Glu Ile Ile Met Gly Asp Pro Ala Gln
 40 45 50

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| agt cca gaa tcc aag gac tca aca gag atg tcc ctg gag aga tcc tcc | 427 |
| Ser Pro Glu Ser Lys Asp Ser Thr Glu Met Ser Leu Glu Arg Ser Ser | |
| 55 60 65 | |
| cag gac ccc tct gtc ccc cag aac ccc cca acc cca ctg ggt cac tcc | 475 |
| Gln Asp Pro Ser Val Pro Gln Asn Pro Pro Thr Pro Leu Gly His Ser | |
| 70 75 80 | |
| aat ccc ttg gac cac cag atc ccc ctg gac ccc cca gcc ccg gag gta | 523 |
| Asn Pro Leu Asp His Gln Ile Pro Leu Asp Pro Pro Ala Pro Glu Val | |
| 85 90 95 | |
| gtc cct acc cca tct gac tgg acc aag gcc tgc gag gcc agc tgg cag | 571 |
| Val Pro Thr Pro Ser Asp Trp Thr Lys Ala Cys Glu Ala Ser Trp Gln | |
| 100 105 110 115 | |
| tgg ggc gct ctc acc aca tgg aac agc ccc cca gtc gtc ccc gcc aac | 619 |
| Trp Gly Ala Leu Thr Trp Asn Ser Pro Pro Val Val Pro Ala Asn | |
| 120 125 130 | |
| gag ccc agc ctg cgg gag ctg gtg cag ggc cgc ccg gcg ggg gcg gag | 667 |
| Glu Pro Ser Leu Arg Glu Leu Val Gln Gly Arg Pro Ala Gly Ala Glu | |
| 135 140 145 | |
| aag ccc tac atc tgc aac gag tgc ggc aag agc ttc agc cag tgg tcc | 715 |
| Lys Pro Tyr Ile Cys Asn Glu Cys Gly Lys Ser Phe Ser Gln Trp Ser | |
| 150 155 160 | |
| aag ctg ctg cgg cac cag cgc atc cac acg gga gag cgg ccc aac acc | 763 |
| Lys Leu Leu Arg His Gln Arg Ile His Thr Gly Glu Arg Pro Asn Thr | |
| 165 170 175 | |
| tgc tcc gag tgc ggc aag agc ttc acg cag agc tcg cac ctg gtg cag | 811 |
| Cys Ser Glu Cys Gly Lys Ser Phe Thr Gln Ser Ser His Leu Val Gln | |
| 180 185 190 195 | |
| cac cag cgc acg cac acc ggc gag aag ccc tac aag tgc ccc gac tgc | 859 |
| His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys | |
| 200 205 210 | |
| ggc aag tgc ttc agc tgg agc tcc aac ctg gtg cag cac cag cgc acg | 907 |
| Gly Lys Cys Phe Ser Trp Ser Ser Asn Leu Val Gln His Gln Arg Thr | |
| 215 220 225 | |
| cac acg gga gaa gag ccc tac aag tgc acg gag tgc gag ata gcc ttc | 955 |
| His Thr Gly Glu Pro Tyr Lys Cys Thr Glu Cys Glu Ile Ala Phe | |
| 230 235 240 | |
| acc cag agc acc aac ctc atc aag cac cag cga tcc cac acc ggc gag | 1003 |
| Thr Gln Ser Thr Asn Leu Ile Lys His Gln Arg Ser His Thr Gly Glu | |
| 245 250 255 | |
| aag ccc tac aag tgc ggc gag tgc cgc cgg gct ttc tac cgc agc tcg | 1051 |
| Lys Pro Tyr Lys Cys Gly Glu Cys Arg Arg Ala Phe Tyr Arg Ser Ser | |
| 260 265 270 275 | |

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| gac ctc atc cag cac cag gcc acc cac aca ggc gag aaa ccc tac aag Asp Leu Ile Gln His Gln Ala Thr His Thr Gly Glu Lys Pro Tyr Lys 280 285 290 | 1099 |
| tgc ccc gag tgc ggg aag cgc ttc ggc cag aac cac aac ctc ctc aag Cys Pro Glu Cys Gly Lys Arg Phe Gly Gln Asn His Asn Leu Leu Lys 295 300 305 | 1147 |
| cac cag aag atc cac gcg ggc gag aag cca tac cgc tgc acc gag tgc His Gln Lys Ile His Ala Gly Glu Lys Pro Tyr Arg Cys Thr Glu Cys 310 315 320 | 1195 |
| ggg aag agc ttc atc cag agc tcg gag ctg acc cag cac cag cgc acg Gly Lys Ser Phe Ile Gln Ser Ser Glu Leu Thr Gln His Gln Arg Thr 325 330 335 | 1243 |
| cac aca ggc gag aag ccc tac gag tgc cta gag tgc ggc aag agc ttc His Thr Gly Glu Lys Pro Tyr Glu Cys Leu Glu Cys Gly Lys Ser Phe 340 345 350 355 | 1291 |
| ggc cac agc tcc acc ctc atc aag cac cag cgg act cac ctg cgc gag Gly His Ser Ser Thr Leu Ile Lys His Gln Arg Thr His Leu Arg Glu 360 365 370 | 1339 |
| gac ccg ttc aag tgc cca gtg tgc ggc aag acc ttc acc ctg agc gcc Asp Pro Phe Lys Cys Pro Val Cys Gly Lys Thr Phe Thr Leu Ser Ala 375 380 385 | 1387 |
| acg ttg ctg cgg cac cag cgc acg cac acg ggc gag cgg ccc tac aag Thr Leu Leu Arg His Gln Arg Thr His Thr Gly Glu Arg Pro Tyr Lys 390 395 400 | 1435 |
| tgc cca gag tgc ggc aag agc ttc agc gtc agc tcc aac ctc atc aac Cys Pro Glu Cys Gly Lys Ser Phe Ser Val Ser Ser Asn Leu Ile Asn 405 410 415 | 1483 |
| cac cag cgc atc cac cgc ggc gag cgg ccc tac atc tgc gcc gac tgc His Gln Arg Ile His Arg Gly Glu Arg Pro Tyr Ile Cys Ala Asp Cys 420 425 430 435 | 1531 |
| ggc aag agc ttc atc atg agc tcc acc ctt atc cgc cac cag cgc atc Gly Lys Ser Phe Ile Met Ser Ser Thr Leu Ile Arg His Gln Arg Ile 440 445 450 | 1579 |
| cac acc ggt gag aag ccc tac aag tgt tcc gac tgc ggc aag agc ttc His Thr Gly Glu Lys Pro Tyr Lys Cys Ser Asp Cys Gly Lys Ser Phe 455 460 465 | 1627 |
| atc cgc agc tcc cac ctt atc cag cac cgc cgc acg cac acc ggc gag Ile Arg Ser Ser His Leu Ile Gln His Arg Arg Thr His Thr Gly Glu 470 475 480 | 1675 |
| aag ccc tac aag tgc ccc gag tgc ggc aag agc ttc agc cag agc tcc Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser 485 490 495 | 1723 |
| aac ctt att acc cac gtc cgc acg cac atg gac gag aac ctg ttc gtg | 1771 |

| | | | |
|---|-----|-----|------|
| Asn Leu Ile Thr His Val Arg Thr His Met Asp Glu Asn Leu Phe Val | | | |
| 500 | 505 | 510 | 515 |
| tgc tcc gac tgc ggg aag gcc ttc ctg gaa gcc cac gag ctg gag cag | | | 1819 |
| Cys Ser Asp Cys Gly Lys Ala Phe Leu Glu Ala His Glu Leu Glu Gln | | | |
| 520 | 525 | 530 | |
| cac cgg gtg atc cat gag agg ggg aag acc cca gcg cgt agg gcc cag | | | 1867 |
| His Arg Val Ile His Glu Arg Gly Lys Thr Pro Ala Arg Arg Ala Gln | | | |
| 535 | 540 | 545 | |
| ggc gac agc ctg ctg ggg ctc ggg gac ccc tcc ctg ctg acc ccg ccg | | | 1915 |
| Gly Asp Ser Leu Leu Gly Leu Gly Asp Pro Ser Leu Leu Thr Pro Pro | | | |
| 550 | 555 | 560 | |
| ccg gga gcc aag ccg cac aag tgt ctc gtg tgc gga aag ggc ttc aac | | | 1963 |
| Pro Gly Ala Lys Pro His Lys Cys Leu Val Cys Gly Lys Gly Phe Asn | | | |
| 565 | 570 | 575 | |
| gac gag ggc atc ttc atg caa cat cag agg atc cac atc gga gaa aac | | | 2011 |
| Asp Glu Gly Ile Phe Met Gln His Gln Arg Ile His Ile Gly Glu Asn | | | |
| 580 | 585 | 590 | 595 |
| ccc tac aaa aat gca gac ggc ctc atc gca cac gca gcc ccc aaa cct | | | 2059 |
| Pro Tyr Lys Asn Ala Asp Gly Leu Ile Ala His Ala Ala Pro Lys Pro | | | |
| 600 | 605 | 610 | |
| cct cag tta cga tcc cca agg ctc cct ttc aga ggg aat tcc tac ccc | | | 2107 |
| Pro Gln Leu Arg Ser Pro Arg Leu Pro Phe Arg Gly Asn Ser Tyr Pro | | | |
| 615 | 620 | 625 | |
| ggg gct gcg gag ggc aga gcg gag gcc ccc gga cag ccc ctt aag ccg | | | 2155 |
| Gly Ala Ala Glu Gly Arg Ala Glu Ala Pro Gly Gln Pro Leu Lys Pro | | | |
| 630 | 635 | 640 | |
| ccg gag ggt cag gag ggc ttc agc cag agg cgg ggg ctg ctg tcc tcc | | | 2203 |
| Pro Glu Gly Gln Glu Gly Phe Ser Gln Arg Arg Gly Leu Leu Ser Ser | | | |
| 645 | 650 | 655 | |
| aag acc tac atc tgc tcc cac tgc gga gag agc ttc ctg gat cgc tct | | | 2251 |
| Lys Thr Tyr Ile Cys Ser His Cys Gly Glu Ser Phe Leu Asp Arg Ser | | | |
| 660 | 665 | 670 | 675 |
| gtg ctc ctc cag cat cag ctc acc cac ggc aac gaa aag ccc ttt ctc | | | 2299 |
| Val Leu Leu Gln His Gln Leu Thr His Gly Asn Glu Lys Pro Phe Leu | | | |
| 680 | 685 | 690 | |
| ttt cct gat tat aga att ggc cta ggg gaa ggc gca ggg ccc agc ccc | | | 2347 |
| Phe Pro Asp Tyr Arg Ile Gly Leu Gly Glu Gly Ala Gly Pro Ser Pro | | | |
| 695 | 700 | 705 | |
| ttc tta agt ggg aag ccc ttt aaa tgc cct gaa tgc aaa caa agc ttt | | | 2395 |
| Phe Leu Ser Gly Lys Pro Phe Lys Cys Pro Glu Cys Lys Gln Ser Phe | | | |
| 710 | 715 | 720 | |
| ggc ctc agc tct gag ctg ctg cac cag aaa gtc cat gca ggc ggg | | | 2443 |
| Gly Leu Ser Ser Glu Leu Leu His Gln Lys Val His Ala Gly Gly | | | |

725

730

735

| | | | | | | | | | | | | | | | | |
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| Lys | Ser | Ser | Gln | Lys | Ser | Pro | Glu | Leu | Gly | Lys | Ser | Ser | Ser | Val | Leu | |
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| Leu | Glu | His | Leu | Arg | Ser | Pro | Leu | Gly | Ala | Arg | Pro | Tyr | Arg | Cys | Ser | |
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| Asp | Cys | Arg | Ala | Ser | Phe | Leu | Asp | Arg | Val | Ala | Leu | Thr | Arg | His | Gln | |
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| gaa | acc | cac | acc | cag | gaa | aaa | ccc | ccc | aat | ccc | gag | gac | ccc | cct | cca | 2635 |
| Glu | Thr | His | Thr | Gln | Glu | Lys | Pro | Pro | Asn | Pro | Glu | Asp | Pro | Pro | Pro | |
| | | | 790 | | | | 795 | | | | 800 | | | | | |
| gag | gca | gtc | acc | ctg | tcc | aca | gat | cag | gaa | ggt | gag | ggc | gag | acc | cct | 2683 |
| Glu | Ala | Val | Thr | Leu | Ser | Thr | Asp | Gln | Glu | Gly | Glu | Gly | Glu | Thr | Pro | |
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| acc | ccc | aca | gag | agc | agc | cat | ggg | gaa | ggg | caa | aac | ccc | aaa | acc | 2731 | |
| Thr | Pro | Thr | Glu | Ser | Ser | His | Gly | Glu | Gly | Gln | Asn | Pro | Lys | Thr | | |
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| Leu | Val | Glu | Glu | Lys | Pro | Tyr | Leu | Cys | Pro | Glu | Cys | Gly | Ala | Gly | Phe | |
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| Thr | Glu | Val | Ala | Ala | Leu | Leu | Leu | His | Arg | Ser | Cys | His | Pro | Gly | Val | |
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| Ser | Leu | * | | | | | | | | | | | | | | |
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100, 11–20

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| acgaggagga | agcgccaggt | ccttcccgcc | gccgcccgcg | ccgcccgcgc | cgcctgctcc | 240 |
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| | | | | Met | Gln | Glu |
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| Asn | Gln | Asn | Leu | Ala | Glu | 480 |
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| 965</td | | | | | | |

| | | | |
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| Arg Ile His Phe Gly Gly Leu Ile Glu Glu Asp Asp Val Ile Leu Leu | | | |
| 200 | 205 | 210 | |
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| 215 | 220 | 225 | |
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| Leu Arg Glu Gln Gln His Arg Arg Trp Arg Leu His Cys Leu Lys Leu | | | |
| 230 | 235 | 240 | |
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| Asp Glu Ile Glu Ile Tyr Gly Lys Ser Lys Ala Lys Val Arg Leu Ser | | | |
| 280 | 285 | 290 | |
| gtg cta gaa agg tta aag gat caa gca gat gga aaa tac gtc tta gtt | | | 1568 |
| Val Leu Glu Arg Leu Lys Asp Gln Ala Asp Gly Lys Tyr Val Leu Val | | | |
| 295 | 300 | 305 | |
| gct ggg atc aca ccc acc cct ctt gga gaa ggg aag agc aca gtc acc | | | 1616 |
| Ala Gly Ile Thr Pro Thr Pro Leu Gly Glu Gly Lys Ser Thr Val Thr | | | |
| 310 | 315 | 320 | |
| atc ggg ctt gtg cag gct ctg acc gca cac ctg aat gtc aac tcc ttt | | | 1664 |
| Ile Gly Leu Val Gln Ala Leu Thr Ala His Leu Asn Val Asn Ser Phe | | | |
| 325 | 330 | 335 | 340 |
| gcc tgc ttg agg cag cct tcc caa gga ccg acg ttt gga gtg aaa gga | | | 1712 |
| Ala Cys Leu Arg Gln Pro Ser Gln Gly Pro Thr Phe Gly Val Lys Gly | | | |
| 345 | 350 | 355 | |
| gga gcc gcg ggt ggt gga tat gcc cag gtc atc ccc atg gag gag ttc | | | 1760 |
| Gly Ala Ala Gly Gly Tyr Ala Gln Val Ile Pro Met Glu Glu Phe | | | |
| 360 | 365 | 370 | |
| aac ctt cac ttg act gga gac atc cac gcc atc acc gct gcc aat aac | | | 1808 |
| Asn Leu His Leu Thr Gly Asp Ile His Ala Ile Thr Ala Ala Asn Asn | | | |
| 375 | 380 | 385 | |
| ttg ctg gct gcc gcc atc gac acg agg att ctt cat gaa aac acg caa | | | 1856 |
| Leu Leu Ala Ala Ala Ile Asp Thr Arg Ile Leu His Glu Asn Thr Gln | | | |
| 390 | 395 | 400 | |
| aca gat aag gct ctg tat aat cgg ctg gtt cct tta gtg aat ggt gtc | | | 1904 |
| Thr Asp Lys Ala Leu Tyr Asn Arg Leu Val Pro Leu Val Asn Gly Val | | | |

| | | | | |
|---|-----|-----|-----|------|
| 405 | 410 | 415 | 420 | |
| aga gaa ttt tca gaa att cag ctt gct cg ^g cta aaa aaa ctg gga ata Arg Glu Phe Ser Glu Ile Gln Leu Ala Arg Leu Lys Lys Leu Gly Ile 425 | | | | 1952 |
| 430 | | | | 435 |
| aat aag act gat ccg agc aca ctg aca gaa gag gaa gtg agt aaa ttt Asn Lys Thr Asp Pro Ser Thr Leu Thr Glu Glu Glu Val Ser Lys Phe 440 | | | | 2000 |
| 445 | | | | 450 |
| gcc cgt ctc gac atc gac cca tct acc atc acg tgg cag aga gta ttg Ala Arg Leu Asp Ile Asp Pro Ser Thr Ile Thr Trp Gln Arg Val Leu 455 | | | | 2048 |
| 460 | | | | 465 |
| gat aca aat gac cga ttt cta cga aaa ata acc atc ggg cag gga aac Asp Thr Asn Asp Arg Phe Leu Arg Lys Ile Thr Ile Gly Gln Gly Asn 470 | | | | 2096 |
| 475 | | | | 480 |
| aca gag aag ggc cat tac cgg cag gcg cag ttt gac atc gca gtg gcc Thr Glu Lys Gly His Tyr Arg Gln Ala Gln Phe Asp Ile Ala Val Ala 485 | | | | 2144 |
| 490 | | | | 495 |
| 495 | | | | 500 |
| agc gag atc atg gcg gtg ctg gcc ctg acg gac agc ctc gca gac atg Ser Glu Ile Met Ala Val Leu Ala Leu Thr Asp Ser Leu Ala Asp Met 505 | | | | 2192 |
| 510 | | | | 515 |
| aag gca cgg ctg gga agg atg gtg gtg gcc agt gac aaa agc ggg cag Lys Ala Arg Leu Gly Arg Met Val Val Ala Ser Asp Lys Ser Gly Gln 520 | | | | 2240 |
| 525 | | | | 530 |
| cct gtg aca gca gat gat ttg ggg gtg aca ggt gct ttg aca gtt ttg Pro Val Thr Ala Asp Asp Leu Gly Val Thr Gly Ala Leu Thr Val Leu 535 | | | | 2288 |
| 540 | | | | 545 |
| atg aaa gat gca ata aaa cca aac ctg atg cag acc ctg gaa ggg aca Met Lys Asp Ala Ile Lys Pro Asn Leu Met Gln Thr Leu Glu Gly Thr 550 | | | | 2336 |
| 555 | | | | 560 |
| cct gtg ttc gtg cat gcg ggc cct ttt gct aac att gct cac ggc aac Pro Val Phe Val His Ala Gly Pro Phe Ala Asn Ile Ala His Gly Asn 565 | | | | 2384 |
| 570 | | | | 575 |
| 575 | | | | 580 |
| tct tca gtg ttg gct gat aaa att gcc ctg aaa ctg gtt ggt gaa gaa Ser Ser Val Leu Ala Asp Lys Ile Ala Leu Lys Leu Val Gly Glu Glu 585 | | | | 2432 |
| 590 | | | | 595 |
| gga ttt gta gtg acc gaa gct ggc ttt ggt gct gac atc gga atg gag Gly Phe Val Val Thr Glu Ala Gly Phe Gly Ala Asp Ile Gly Met Glu 600 | | | | 2480 |
| 605 | | | | 610 |
| aaa ttc ttc aac atc aag tgc cga gct tcc ggc ttg gtg ccc aac gtg Lys Phe Phe Asn Ile Lys Cys Arg Ala Ser Gly Leu Val Pro Asn Val 615 | | | | 2528 |
| 620 | | | | 625 |
| gtt gtg tta gtg gca acg gtg cga gct ctg aag atg cat gga ggc ggg Val Val Leu Val Ala Thr Val Arg Ala Leu Lys Met His Gly Gly Gly 630 | | | | 2576 |
| 635 | | | | 640 |

| | |
|---|------|
| cca agt gta acg gct ggt gtt cct ctt aag aaa gaa tat aca gag gag Pro Ser Val Thr Ala Gly Val Pro Leu Lys Lys Glu Tyr Thr Glu Glu 645 650 655 660 | 2624 |
| aac atc cag ctg gtg gca gac ggc tgc tgt aac ctc cag aag caa att Asn Ile Gln Leu Val Ala Asp Gly Cys Cys Asn Leu Gln Lys Gln Ile 665 670 675 | 2672 |
| cag atc act cag ctc ttt ggg gtt ccc gtt gtg gtg gct ctg aat gtc Gln Ile Thr Gln Leu Phe Gly Val Pro Val Val Ala Leu Asn Val 680 685 690 | 2720 |
| ttc aag acc gac acc cgc gct gag att gac ttg gtg tgt gag ctt gca Phe Lys Thr Asp Thr Arg Ala Glu Ile Asp Leu Val Cys Glu Leu Ala 695 700 705 | 2768 |
| aag cgg gct ggt gcc ttt gat gca gtc ccc tgc tat cac tgg tcg gtt Lys Arg Ala Gly Ala Phe Asp Ala Val Pro Cys Tyr His Trp Ser Val 710 715 720 | 2816 |
| ggg gga aaa gga tcg gtg gac ttg gct cgg gct gtg aga gag gct gcg Gly Gly Lys Gly Ser Val Asp Leu Ala Arg Ala Val Arg Glu Ala Ala 725 730 735 740 | 2864 |
| agt aaa aga agc cga ttc cag ttc ctg tat gat gtt cag gtt cca att Ser Lys Arg Ser Arg Phe Gln Phe Leu Tyr Asp Val Gln Val Pro Ile 745 750 755 | 2912 |
| gtg gac aag ata agg acc att gct cag gct gtc tat gga gcc aaa gat Val Asp Lys Ile Arg Thr Ile Ala Gln Ala Val Tyr Gly Ala Lys Asp 760 765 770 | 2960 |
| att gaa ctc tct cct gag gca caa gcc aaa ata gat cgt tac act caa Ile Glu Leu Ser Pro Glu Ala Gln Ala Lys Ile Asp Arg Tyr Thr Gln 775 780 785 | 3008 |
| cag ggt ttt gga aat ttg ccc atc tgc atg gca aag acc cac ctt tct Gln Gly Phe Gly Asn Leu Pro Ile Cys Met Ala Lys Thr His Leu Ser 790 795 800 | 3056 |
| cta tct cac caa cct gac aaa aaa ggt gtg cca agg gac ttc atc tta Leu Ser His Gln Pro Asp Lys Lys Gly Val Pro Arg Asp Phe Ile Leu 805 810 815 820 | 3104 |
| cct atc agt gac gtc cgg gcc agc ata ggc gct ggg ttc att tac cct Pro Ile Ser Asp Val Arg Ala Ser Ile Gly Ala Gly Phe Ile Tyr Pro 825 830 835 | 3152 |
| ttg gtc gga acg atg agc acc atg cca gga ctg ccc acc cgg ccc tgc Leu Val Gly Thr Met Ser Thr Met Pro Gly Leu Pro Thr Arg Pro Cys 840 845 850 | 3200 |
| ttt tat gac ata gat ctt gat acc gaa aca gaa caa gtt aaa ggc ttg Phe Tyr Asp Ile Asp Leu Asp Thr Glu Thr Glu Gln Val Lys Gly Leu 855 860 865 | 3248 |

| | |
|--|------|
| ttc taa gtggacaagg ctctcacagg acccgatgca gactcctgaa acagactact | 3304 |
| Phe * | |
| 870 | |
| ctttgcctt ttgctgcagt tggagaagaa actgaatttggaaaatgtct gttatgcaat | 3364 |
| gctggagaca tggtgaaata ggccaaagat ttcttcttcg ttcaagatga attctgttca | 3424 |
| cagtgaggta tggtgttcgg caaaaggacc tccaccaaga ctgaaagaaa ctaatttatt | 3484 |
| tctgtttctg tggagttcc attatttcta ctgcttacac tttagaatgt ttatttatg | 3544 |
| gggactaagg gattaggagt gtgaactaaa aggttaacatt ttccactctc aagtttctta | 3604 |
| ctttgtctt gaactgaaaa taaacatgga tctagaaaaac caaaaaaaaaaaa aaa | 3657 |

<210> 5
 <211> 806
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (341)..(487)

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| accacgaggt cacggtaagg gtggaaaccag gattctgccc ggatggggat ctggcatggg | 60 |
| gggggtgggg gttgatttgg gaagcagagc acagcagccc aaatttgctt gtaatgtcgg | 120 |
| cggctacaga ggaaaggcca agaatggaca gattaataaa gggccatcta caagccacga | 180 |
| ataaggccat caccagaagc caaccccgcc agtccttgat cttaggacttc cagacttcaa | 240 |
| aactttcttgc ctgccttcac tgccttgggg gagacttgga gagaccaggt | 300 |
| ggactggagt agactgttga gagacgctgg tctggtaag atg tcc agg aaa cca | 355 |
| Met Ser Arg Lys Pro | |
| 1 5 | |
| cga gcc tcc agc cca ttg tcc aac aac cac cca cca aca cca aag agg | 403 |
| Arg Ala Ser Ser Pro Leu Ser Asn Asn His Pro Pro Thr Pro Lys Arg | |
| 10 15 20 | |
| cga gga agt gga agg ttc cca aga caa ccc gga agg gaa aag gga ccc | 451 |
| Arg Gly Ser Gly Arg Phe Pro Arg Gln Pro Gly Arg Glu Lys Gly Pro | |
| 25 30 35 | |
| atc aag gaa gtt cca gga aca aaa ggc tct ccc taa aaga ccggccgcttc | 501 |
| Ile Lys Glu Val Pro Gly Thr Lys Gly Ser Pro * | |
| 40 45 | |
| aaaaaaaaacct gaggaatgga gtggggccaaac actatccagc cactctgacc agccgaacga | 561 |

| | |
|---|-----|
| ggaactcaat caaaatgagc catagcggga ccacaaggc aaggagacca ccaccttctc | 621 |
| cagtctctct tcggacagcc agtaattccc gggcaaggcc agagacttca agtctatctg | 681 |
| aaaagtctcc agaggtctaa cccagataa atagccaaca gggtagtag tacattttac | 741 |
| accccaaaga gtgtccccca tggatgaa aataaagtga acatgttgca aactgaaaaaa | 801 |
| aaaaaa | 806 |

<210> 6
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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (341)..(523)

| | |
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| <400> 6 | |
| accacgaggt cacggtaagg gtggAACAG gattctgccc ggatggggat ctggcatggg | 60 |
| gggggtgggg gttgatttgg gaagcagagc acagcagccc aaatttgcTT gtaatgtcgg | 120 |
| cggctacaga ggaaaggcca agaatggaca gattaataaa gggccatcta caagccacga | 180 |
| ataaggccat caccagaAGC caaccccgcc agtccttgat ctggacttc cagacttcaa | 240 |
| aactttcta gcctgctggc ctgccttcac tgcctggg gagacttgg aGAGCAGGT | 300 |
| ggactggagt agactgttga gagacgctgg tctggtaag atg tcc agg aaa cca | 355 |
| Met Ser Arg Lys Pro | |
| 1 5 | |
| cga gcc tcc agc cca ttg tcc aac aac cac cca cca aca cca aag agg | 403 |
| Arg Ala Ser Ser Pro Leu Ser Asn Asn His Pro Pro Thr Pro Lys Arg | |
| 10 15 20 | |
| cga gga agt gga agg cat cct ctc atc cct ggc cca gaa gcc cta tca | 451 |
| Arg Gly Ser Gly Arg His Pro Leu Ile Pro Gly Pro Glu Ala Leu Ser | |
| 25 30 35 | |
| aag ttc cca aga caa ccc gga agg gaa aag gga ccc atc aag gaa gtt | 499 |
| Lys Phe Pro Arg Gln Pro Gly Arg Glu Lys Gly Pro Ile Lys Glu Val | |
| 40 45 50 | |
| cca gga aca aaa ggc tct ccc taa aagaccggcg cttaaaaaaa acctgaggaa | 553 |
| Pro Gly Thr Lys Gly Ser Pro * | |
| 55 60 | |
| tggagtggc caacactatc cagccactct gaccagccga acgaggaact caatcaaaat | 613 |
| gagccatagc gggaccacaa gggcaaggag accaccacct tctccagtct ctttcggac | 673 |

| | |
|---|-----|
| agccagtaat tcccgggcaa ggccagagac ttcaagtcta tctgaaaagt ctccagaggt | 733 |
| ctaaccaggataaaatagcc aacagggtgt agagtacatt ttacacccca aagagtgtgc | 793 |
| cccatggtga tgaaaataaa gtgaacatgt tgcaaactga aaaaaaaaaa | 842 |

<210> 7
 <211> 1805
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (9)..(1517)

<400> 7

| | |
|--|----|
| actgggaa atg tgc agg att ctg aat gat gag gct gcc tgg aat gag ttg | 50 |
| Met Cys Arg Ile Leu Asn Asp Glu Ala Ala Trp Asn Glu Leu | |
| 1 5 10 | |

| | |
|---|----|
| gcc aga gct tgt cta cat cac atg gaa gtg gag ttt gca atc cgt gtt | 98 |
| Ala Arg Ala Cys Leu His His Met Glu Val Glu Phe Ala Ile Arg Val | |
| 15 20 25 30 | |

| | |
|---|-----|
| tat cgg aga att gga aat gtt ggc ata gtg atg tcc ttg gaa caa ata | 146 |
| Tyr Arg Arg Ile Gly Asn Val Gly Ile Val Met Ser Leu Glu Gln Ile | |
| 35 40 45 | |

| | |
|---|-----|
| aag gga ata gag gac tac aat ctt ttg gca gga cac ctt gcc atg ttt | 194 |
| Lys Gly Ile Glu Asp Tyr Asn Leu Leu Ala Gly His Leu Ala Met Phe | |
| 50 55 60 | |

| | |
|---|-----|
| acc aac gat tat aac ctg gct cag gac ttg tac ctt gca tcc agc tgt | 242 |
| Thr Asn Asp Tyr Asn Leu Ala Gln Asp Leu Tyr Leu Ala Ser Ser Cys | |
| 65 70 75 | |

| | |
|---|-----|
| cct att gct gcc ctg gag atg aga agg gat tta cag cat tgg gac agt | 290 |
| Pro Ile Ala Ala Leu Glu Met Arg Arg Asp Leu Gln His Trp Asp Ser | |
| 80 85 90 | |

| | |
|---|-----|
| gct cta caa ctg gca aag cat ttg gcc cca gac cag ata cct ttt ata | 338 |
| Ala Leu Gln Leu Ala Lys His Leu Ala Pro Asp Gln Ile Pro Phe Ile | |
| 95 100 105 110 | |

| | |
|---|-----|
| tca aaa gaa tat gct att cag ctt gaa ttc gcg ggt gat tat gta aat | 386 |
| Ser Lys Glu Tyr Ala Ile Gln Leu Glu Phe Ala Gly Asp Tyr Val Asn | |
| 115 120 125 | |

| | |
|---|-----|
| gct ttg gct cat tat gag aaa gga ata aca ggt gat aat aag gaa cat | 434 |
| Ala Leu Ala His Tyr Glu Lys Gly Ile Thr Gly Asp Asn Lys Glu His | |
| 130 135 140 | |

| | |
|---|-----|
| gat gaa gct tgt ctg gct gga gtg gcc cag atg tcc ata aga atg gga | 482 |
| Asp Glu Ala Cys Leu Ala Gly Val Ala Gln Met Ser Ile Arg Met Gly | |

| 145 | 150 | 155 | |
|--|-----|-----|-----|
| gac ata cgt cga ggg gtt aac caa gcc ctc aag cat ccc agc agg gtc Asp Ile Arg Arg Gly Val Asn Gln Ala Leu Lys His Pro Ser Arg Val | 160 | 165 | 170 |
| 530 | | | |
| ctt aaa aga gac tgt gga gcc ata ttg gag aat atg aag caa ttt tca Leu Lys Arg Asp Cys Gly Ala Ile Leu Glu Asn Met Lys Gln Phe Ser | 175 | 180 | 185 |
| 578 | | | |
| 190 | | | |
| gaa gcg gcc caa ctg tat gaa aaa ggt ctc tac tac gat aaa gca gca Glu Ala Ala Gln Leu Tyr Glu Lys Gly Leu Tyr Tyr Asp Lys Ala Ala | 195 | 200 | 205 |
| 626 | | | |
| tct gtt tac atc cgc tct aag aat tgg gca aaa gtt ggt gat ctt ctg Ser Val Tyr Ile Arg Ser Lys Asn Trp Ala Lys Val Gly Asp Leu Leu | 210 | 215 | 220 |
| 674 | | | |
| ccc cac gtt tct tct cct aag atc cat ttg cag tat gcc aaa gcc aag Pro His Val Ser Ser Pro Lys Ile His Leu Gln Tyr Ala Lys Ala Lys | 225 | 230 | 235 |
| 722 | | | |
| 240 | | | |
| gaa gca gat gga aga tac aaa gaa gct gtt gta gct tat gaa aat gca Glu Ala Asp Gly Arg Tyr Lys Glu Ala Val Val Ala Tyr Glu Asn Ala | 245 | 250 | 250 |
| 770 | | | |
| 255 | | | |
| aaa cag tgg caa agt gta atc cgc atc tat ctg gat cac ctc aat aat Lys Gln Trp Gln Ser Val Ile Arg Ile Tyr Leu Asp His Leu Asn Asn | 260 | 265 | 270 |
| 818 | | | |
| 275 | | | |
| cct gaa aaa gct gtc aat att gtt aga gag acc cag tct ctg gat gga Pro Glu Lys Ala Val Asn Ile Val Arg Glu Thr Gln Ser Leu Asp Gly | 280 | 285 | 285 |
| 866 | | | |
| 290 | | | |
| gcc aaa atg gta gcc agg ttt ttt cta cag ctt ggt gac tat ggg tct Ala Lys Met Val Ala Arg Phe Phe Leu Gln Leu Gly Asp Tyr Gly Ser | 295 | 300 | 300 |
| 914 | | | |
| 305 | | | |
| gcc atc cag ttt ctt gtc atg tcc aaa tgc aac aat gaa gct ttc aca Ala Ile Gln Phe Leu Val Met Ser Lys Cys Asn Asn Glu Ala Phe Thr | 310 | 315 | 315 |
| 962 | | | |
| 320 | | | |
| ctg gct cag caa cac aac aaa atg gaa atc tat gca gat att att ggt Leu Ala Gln Gln His Asn Lys Met Glu Ile Tyr Ala Asp Ile Ile Gly | 325 | 330 | 330 |
| 1010 | | | |
| 335 | | | |
| tct gaa gac act act aat gaa gac tat caa agc att gcc tta tac ttt Ser Glu Asp Thr Thr Asn Glu Asp Tyr Gln Ser Ile Ala Leu Tyr Phe | 340 | 345 | 350 |
| 1058 | | | |
| 350 | | | |
| gaa gga gaa aag aga tat ctt cag gct gga aaa ttc ttc ttg ctg tgt Glu Gly Glu Lys Arg Tyr Leu Gln Ala Gly Lys Phe Phe Leu Leu Cys | 355 | 360 | 365 |
| 1106 | | | |
| 365 | | | |
| ggc caa tat tca cga gca ctt aaa cac ttc ctg aaa tgc cca agc tcg Gly Gln Tyr Ser Arg Ala Leu Lys His Phe Leu Lys Cys Pro Ser Ser | 370 | 375 | 380 |
| 1154 | | | |

| | |
|---|------|
| gaa gat aat gtg gca ata gaa atg gca att gaa act gtt ggt cag gcc Glu Asp Asn Val Ala Ile Glu Met Ala Ile Glu Thr Val Gly Gln Ala 385 390 395 | 1202 |
| aaa gat gaa ctg ctg acc aat cag ctg ata gac cat ctc ctg ggg gag Lys Asp Glu Leu Leu Thr Asn Gln Leu Ile Asp His Leu Leu Gly Glu 400 405 410 | 1250 |
| aac gat agc atg cct aag gat gcc aag tac ctg ttc cgc ttg tac atg Asn Asp Ser Met Pro Lys Asp Ala Lys Tyr Leu Phe Arg Leu Tyr Met 415 420 425 430 | 1298 |
| gct ctg aag caa tac cga gaa gct gcc cag act gcc atc atc att gcc Ala Leu Lys Gln Tyr Arg Glu Ala Ala Gln Thr Ala Ile Ile Ala 435 440 445 | 1346 |
| aga gaa gag cag tct gca ggc aac tac cgg aat gca cac gat gtt ctc Arg Glu Glu Gln Ser Ala Gly Asn Tyr Arg Asn Ala His Asp Val Leu 450 455 460 | 1394 |
| ttc agt atg tat gca gaa ctg aaa tcc cag aag atc aaa att ccc tcc Phe Ser Met Tyr Ala Glu Leu Lys Ser Gln Lys Ile Lys Ile Pro Ser 465 470 475 | 1442 |
| gag atg gcc acc aac ctc atg att ctg cac agc tat ata cta gta aga Glu Met Ala Thr Asn Leu Met Ile Leu His Ser Tyr Ile Leu Val Arg 480 485 490 | 1490 |
| ttc atg tta aaa atg gag atc aca tga aaggg gctcgcatgc tcattcggt Phe Met Leu Lys Met Glu Ile Thr *495 500 | 1542 |
| ggccaacaac atcagcaaat ttccatcaca cattgtaccc atcctgacgt caactgtat | 1602 |
| tgagtgtcac agggcaggcc tgaagaactc tgcttcagc ttccgagcta tggatgatgag | 1662 |
| gcctgaatac cgccggaaaa tagatgccaa atacaaaaag aagatcgagg gaatggtcag | 1722 |
| gagaccgat atatctgaga tagaagaggc cacgactcca tgtccattct gcaaatttct | 1782 |
| tctcccgat agagaactcc tca | 1805 |

<210> 8
 <211> 1523
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (231)..(1202)

<400> 8
 tattttgaag ctgtttaccc tcgcagctct ctgactggca cccctgcctg cctgccccgc 60

| | |
|---|-----|
| cctgcacaac atgcagccct ccggcctcga gggtcccgac acgtttggtc ggtggcctct | 120 |
| gctgagtcgt ctgctcctgc tgctgctgct ccagcctgta acctgtgcct acaccacgcc | 180 |
| aggccccccc cagagccctc accacgctgg gcgcggccag agcccacacc atg ccg Met Pro 1 | 236 |
| ggc acc tac gct ccc tcg acc aca ctc agt agt ccc agc acc cag ggc Gly Thr Tyr Ala Pro Ser Thr Thr Leu Ser Ser Pro Ser Thr Gln Gly 5 10 15 | 284 |
| ctg caa gag cag gca cgccgtg atg cggttccg ctcgtgac Leu Gln Glu Gln Ala Arg Ala Leu Met Arg Asp Phe Pro Leu Val Asp 20 25 30 | 332 |
| ggc cac aac gac ctg ccc ctg gtc cta agg cag gtt tac cag aaa ggg Gly His Asn Asp Leu Pro Leu Val Leu Arg Gln Val Tyr Gln Lys Gly 35 40 45 50 | 380 |
| cta cag gat gtt aac ctg cgc aat ttc agc tac ggc cag acc agc ctg Leu Gln Asp Val Asn Leu Arg Asn Phe Ser Tyr Gly Gln Thr Ser Leu 55 60 65 | 428 |
| gac agg ctt aga gat ggc ctc gtg ggc gcc cag ttc tgg tca gcc tat Asp Arg Leu Arg Asp Gly Leu Val Gly Ala Gln Phe Trp Ser Ala Tyr 70 75 80 | 476 |
| gtg cca tgc cag acc cag gac cggttccg ctcaccctg gag Val Pro Cys Gln Thr Gln Asp Arg Asp Ala Leu Arg Leu Thr Leu Glu 85 90 95 | 524 |
| cag att gac ctc ata cgc cgc atg tgt gcc tcc tat tct gag ctg gag Gln Ile Asp Leu Ile Arg Arg Met Cys Ala Ser Tyr Ser Glu Leu Glu 100 105 110 | 572 |
| ctt gtg acc tcg gct aaa gct ctg aac gac act cag aaa ttg gcc tgc Leu Val Thr Ser Ala Lys Ala Leu Asn Asp Thr Gln Lys Leu Ala Cys 115 120 125 130 | 620 |
| ctc atc ggt gta gag ggt ggc cac tcg ctg gac aat agc ctc tcc atc Leu Ile Gly Val Glu Gly His Ser Leu Asp Asn Ser Leu Ser Ile 135 140 145 | 668 |
| tta cgt acc ttc tac atg ctg gga gtg cgc tac ctg acg ctc acc cac Leu Arg Thr Phe Tyr Met Leu Gly Val Arg Tyr Leu Thr Leu Thr His 150 155 160 | 716 |
| acc tgc aac aca ccc tgg gca gag agc tcc gct aag ggc gtc cac tcc Thr Cys Asn Thr Pro Trp Ala Glu Ser Ser Ala Lys Gly Val His Ser 165 170 175 | 764 |
| ttc tac aac aac atc agc ggg ctg act gac ttt ggt gag aag gtg gtg Phe Tyr Asn Asn Ile Ser Gly Leu Thr Asp Phe Gly Glu Lys Val Val 180 185 190 | 812 |

| | |
|---|------|
| gca gaa atg aac cgc ctg ggc atg atg gta gac tta tcc cat gtc tca Ala Glu Met Asn Arg Leu Gly Met Met Val Asp Leu Ser His Val Ser 195 200 205 210 | 860 |
| gat gct gtg gca cgg cggtt ctg gaa gtg tca cag gca cct gtg atc Asp Ala Val Ala Arg Arg Ala Leu Glu Val Ser Gln Ala Pro Val Ile 215 220 225 | 908 |
| ttc tcc cac tcg gct gcc cgg ggt gtg tgc aac agt gct cgg aat gtt Phe Ser His Ser Ala Ala Arg Gly Val Cys Asn Ser Ala Arg Asn Val 230 235 240 | 956 |
| cct gat gac atc ctg cag ctt ctg aag aag aac ggt ggc gtc gtg atg Pro Asp Asp Ile Leu Gln Leu Lys Lys Asn Gly Gly Val Val Met 245 250 255 | 1004 |
| gtg tct ttg tcc atg gga gta ata cag tgc aac cca tca gcc aat gtg Val Ser Leu Ser Met Gly Val Ile Gln Cys Asn Pro Ser Ala Asn Val 260 265 270 | 1052 |
| tcc act gtg gca gat cac ttc gac cac atc aag gct gtc att gga tcc Ser Thr Val Ala Asp His Phe Asp His Ile Lys Ala Val Ile Gly Ser 275 280 285 290 | 1100 |
| aag ttc atc ggg att ggt gga gat tat gat ggg gcc ggc aag tac agg Lys Phe Ile Gly Ile Gly Asp Tyr Asp Gly Ala Gly Lys Tyr Arg 295 300 305 | 1148 |
| aag aaa aca aag tgc aaa gcc cct tgg agg aca agt tcc cgg atg agc Lys Lys Thr Lys Cys Lys Ala Pro Trp Arg Thr Ser Ser Arg Met Ser 310 315 320 | 1196 |
| agc tga gcagttcctg ccactccgac ctctcacgtc tgcgtcagag acagagtctg Ser * | 1252 |
| acttcaggcc aggaactcac tgagattccc atacactgga cagccaaagg accagccaaag | 1312 |
| tggtcagtct cagagtccctc cccccacatg gccccagtc ttgcagttgt ggccaccttc | 1372 |
| ccagtcctta ttctgtggct ctgatgaccc agttagtcct gccagatgtc actgttagcaa | 1432 |
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| agc atc aat aaa tcc ggg gcc tct tat gag aag atc aaa gaa gtg att Ser Ile Asn Lys Ser Gly Ala Ser Tyr Glu Lys Ile Lys Glu Val Ile 230 235 240 | 777 |
| ggt cat ggt tgt aaa tgg acg ctc agc aga ttt ttt tcc tac ctt cgt Gly His Gly Cys Lys Trp Thr Leu Ser Arg Phe Phe Ser Tyr Leu Arg 245 250 255 | 825 |
| agc tgg gat gtg gac gat ctg ctt ttg tgg aag aaa atc cac cgc atg Ser Trp Asp Val Asp Asp Leu Leu Leu Trp Lys Lys Ile His Arg Met 260 265 270 275 | 873 |
| gtt att ctc acc att ctc gcc att gca cca tct gtc ccc ttt gct gcc Val Ile Leu Thr Ile Leu Ala Ile Ala Pro Ser Val Pro Phe Ala Ala 280 285 290 | 921 |
| aat tgc ttt gag ctc ttt ggg ttt gat att ttg att gat gac aac ttg Asn Cys Phe Glu Leu Phe Gly Phe Asp Ile Leu Ile Asp Asp Asn Leu 295 300 305 | 969 |
| aaa cca tgg ctt tta gag gtc aac tac agc cca gcc ttg acc ttg gat Lys Pro Trp Leu Leu Glu Val Asn Tyr Ser Pro Ala Leu Thr Leu Asp 310 315 320 | 1017 |
| tgt tca aca gat gtg ttg gtg aag aga aaa ctt gtc cat gat att att Cys Ser Thr Asp Val Leu Val Lys Arg Lys Leu Val His Asp Ile Ile 325 330 335 | 1065 |
| gac ctg att tac tta aat ggt cta aga aat gag ggg aga gaa gcc agt Asp Leu Ile Tyr Leu Asn Gly Leu Arg Asn Glu Gly Arg Glu Ala Ser 340 345 350 355 | 1113 |
| aat gcc aca cat gga aat tcc aac atc gac gct gca aaa agt gac aga Asn Ala Thr His Gly Asn Ser Asn Ile Asp Ala Ala Lys Ser Asp Arg 360 365 370 | 1161 |
| ggt ggg ctt gat gct cct gac tgt ctt cct tat gat tct ctt tcg ttc Gly Gly Leu Asp Ala Pro Asp Cys Leu Pro Tyr Asp Ser Leu Ser Phe 375 380 385 | 1209 |
| aca agc aga atg tac aac gag gat gac tct gtg gtg gag aaa gct gtg Thr Ser Arg Met Tyr Asn Glu Asp Asp Ser Val Val Glu Lys Ala Val 390 395 400 | 1257 |
| agt gtg cgt cct gaa gct gca cct gcc tcc cag ctg gaa gga gag atg Ser Val Arg Pro Glu Ala Ala Pro Ala Ser Gln Leu Glu Gly Glu Met 405 410 415 | 1305 |
| agt ggg cag gat ttt cat ctg tca aca agg gag atg cca caa agc aag Ser Gly Gln Asp Phe His Leu Ser Thr Arg Glu Met Pro Gln Ser Lys 420 425 430 435 | 1353 |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------|-----|-----|--|------|---|--|-----|-----|-----|-----|--|------|---|--|-----|-----|-----|-----|---|------|---|--|-----|-----|-----|-----|---|------|---|--|-----|-----|-----|-----|----------------------------------|------|-------------------|--|-----|--|
| ccc aag tta cg ^g agc agg cac ac ^g c ^c t cac a ^a g ^a c a ^c a c ^t c at ^g c ^{cc} tac | 1401 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pro Lys Leu Arg Ser Arg His Thr Pro His Lys Thr Leu Met Pro Tyr | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 440 | 445 | 450 | | gc ^g tcc ctc ttc c ^a g tc ^g cac tcc tgc a ^a g acc a ^a g acc tcc c ^{cg} t ^t gt | 1449 | Ala Ser Leu Phe Gln Ser His Ser Cys Lys Thr Lys Thr Ser Pro Cys | | 455 | 460 | 465 | | gtc ctg tca gac cgt g ^g c aaa g ^c t c ^{ca} gat ccc c ^{aa} g ^c a g ^g c a ^a c t ^{tt} t | 1497 | Val Leu Ser Asp Arg Gly Lys Ala Pro Asp Pro Gln Ala Gly Asn Phe | | 470 | 475 | 480 | | gtt ctt gtt ttt cct ttc aat gaa g ^c a act c ^t c g ^g a g ^c t tcc agg a ^a t | 1545 | Val Leu Val Phe Pro Phe Asn Glu Ala Thr Leu Gly Ala Ser Arg Asn | | 485 | 490 | 495 | | gga tta aat gtc aaa aga ata atc c ^a a g ^a g c ^t c c ^a g aaa c ^t a at ^g a ^a t | 1593 | Gly Leu Asn Val Lys Arg Ile Ile Gln Glu Leu Gln Lys Leu Met Asn | | 500 | 505 | 510 | 515 | aag c ^a a cat tcc taa | 1608 | Lys Gln His Ser * | | 520 | |
| 450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gc ^g tcc ctc ttc c ^a g tc ^g cac tcc tgc a ^a g acc a ^a g acc tcc c ^{cg} t ^t gt | 1449 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ala Ser Leu Phe Gln Ser His Ser Cys Lys Thr Lys Thr Ser Pro Cys | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 455 | 460 | 465 | | gtc ctg tca gac cgt g ^g c aaa g ^c t c ^{ca} gat ccc c ^{aa} g ^c a g ^g c a ^a c t ^{tt} t | 1497 | Val Leu Ser Asp Arg Gly Lys Ala Pro Asp Pro Gln Ala Gly Asn Phe | | 470 | 475 | 480 | | gtt ctt gtt ttt cct ttc aat gaa g ^c a act c ^t c g ^g a g ^c t tcc agg a ^a t | 1545 | Val Leu Val Phe Pro Phe Asn Glu Ala Thr Leu Gly Ala Ser Arg Asn | | 485 | 490 | 495 | | gga tta aat gtc aaa aga ata atc c ^a a g ^a g c ^t c c ^a g aaa c ^t a at ^g a ^a t | 1593 | Gly Leu Asn Val Lys Arg Ile Ile Gln Glu Leu Gln Lys Leu Met Asn | | 500 | 505 | 510 | 515 | aag c ^a a cat tcc taa | 1608 | Lys Gln His Ser * | | 520 | | | | | | | | | |
| 465 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gtc ctg tca gac cgt g ^g c aaa g ^c t c ^{ca} gat ccc c ^{aa} g ^c a g ^g c a ^a c t ^{tt} t | 1497 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Val Leu Ser Asp Arg Gly Lys Ala Pro Asp Pro Gln Ala Gly Asn Phe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 470 | 475 | 480 | | gtt ctt gtt ttt cct ttc aat gaa g ^c a act c ^t c g ^g a g ^c t tcc agg a ^a t | 1545 | Val Leu Val Phe Pro Phe Asn Glu Ala Thr Leu Gly Ala Ser Arg Asn | | 485 | 490 | 495 | | gga tta aat gtc aaa aga ata atc c ^a a g ^a g c ^t c c ^a g aaa c ^t a at ^g a ^a t | 1593 | Gly Leu Asn Val Lys Arg Ile Ile Gln Glu Leu Gln Lys Leu Met Asn | | 500 | 505 | 510 | 515 | aag c ^a a cat tcc taa | 1608 | Lys Gln His Ser * | | 520 | | | | | | | | | | | | | | | | | |
| 480 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gtt ctt gtt ttt cct ttc aat gaa g ^c a act c ^t c g ^g a g ^c t tcc agg a ^a t | 1545 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Val Leu Val Phe Pro Phe Asn Glu Ala Thr Leu Gly Ala Ser Arg Asn | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 485 | 490 | 495 | | gga tta aat gtc aaa aga ata atc c ^a a g ^a g c ^t c c ^a g aaa c ^t a at ^g a ^a t | 1593 | Gly Leu Asn Val Lys Arg Ile Ile Gln Glu Leu Gln Lys Leu Met Asn | | 500 | 505 | 510 | 515 | aag c ^a a cat tcc taa | 1608 | Lys Gln His Ser * | | 520 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 495 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gga tta aat gtc aaa aga ata atc c ^a a g ^a g c ^t c c ^a g aaa c ^t a at ^g a ^a t | 1593 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gly Leu Asn Val Lys Arg Ile Ile Gln Glu Leu Gln Lys Leu Met Asn | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 500 | 505 | 510 | 515 | aag c ^a a cat tcc taa | 1608 | Lys Gln His Ser * | | 520 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 510 | 515 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| aag c ^a a cat tcc taa | 1608 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lys Gln His Ser * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| gaggggtgtga tgggagtgat tggaaatatt gcagccctgc atagtctcca tcagggatgt | 120 |
| gacaaagtgg ataatctcta ccacgtgaga aacttccaac attacttgca aatcagattt | 180 |
| aatgaataaaa ataaaagctgt agcacttggc acattcattt ggacccttac ccaaacattt | 240 |
| tcaatattgt gtacgttatac tttattatca ggtcacaaaa gatgtcataa aagaatttgc | 300 |
| agatgacggc gtcaagtacc tggactaag gagcacaccc agaagagaaa atgctactgg | 360 |
| a atg act aaa aag act tat gtg gaa tct ata ctt gaa ggt ata aaa | 406 |
| Met Thr Lys Lys Thr Tyr Val Glu Ser Ile Leu Glu Gly Ile Lys | |

| 1 | 5 | 10 | 15 | |
|--|-----|-----|-----|------|
| cag tcc aaa caa gaa aac ttg gac att gat gtt agg tat ttg ata gca Gln Ser Lys Gln Glu Asn Leu Asp Ile Asp Val Arg Tyr Leu Ile Ala | 20 | 25 | 30 | 454 |
| gtt gac aga aga ggt ggc cct tta gta gcc aag gag act gta aaa ctt Val Asp Arg Arg Gly Gly Pro Leu Val Ala Lys Glu Thr Val Lys Leu | 35 | 40 | 45 | 502 |
| gcc gag gag ttc ttc ctt tct act gag ggt aca gtt ctt ggc ctt gac Ala Glu Glu Phe Phe Leu Ser Thr Glu Gly Thr Val Leu Gly Leu Asp | 50 | 55 | 60 | 550 |
| ctc agt gga gac cct act gta gga caa gca aaa gac ttc ttg gaa cct Leu Ser Gly Asp Pro Thr Val Gly Gln Ala Lys Asp Phe Leu Glu Pro | 65 | 70 | 75 | 598 |
| ctt tta gaa gct aag aaa gca ggt ctg aag tta gca ttg cat ctt tca Leu Leu Glu Ala Lys Ala Gly Leu Lys Leu Ala Leu His Leu Ser | 80 | 85 | 90 | 646 |
| gag att cca aac caa aaa gaa aca caa ata ctc ctg gat ctg ctt Glu Ile Pro Asn Gln Lys Glu Thr Gln Ile Leu Leu Asp Leu Leu | 100 | 105 | 110 | 694 |
| cct gac aga atc ggg cat gga aca ttt ctc aac tcc ggt gag gga gga Pro Asp Arg Ile Gly His Gly Thr Phe Leu Asn Ser Gly Glu Gly | 115 | 120 | 125 | 742 |
| tcc ctg gat ctg gtg gac ttt gtg agg caa cat cgg ata cca ctg gaa Ser Leu Asp Leu Val Asp Phe Val Arg Gln His Arg Ile Pro Leu Glu | 130 | 135 | 140 | 790 |
| ctc tgt ttg acc tca aac gtc aaa agt cag aca gtt cca tct tat gac Leu Cys Leu Thr Ser Asn Val Lys Ser Gln Thr Val Pro Ser Tyr Asp | 145 | 150 | 155 | 838 |
| cag cac cat ttc gga ttc tgg tac agc att gcc cat cct tct gtg atc Gln His His Phe Trp Tyr Ser Ile Ala His Pro Ser Val Ile | 160 | 165 | 170 | 886 |
| tgt act gat gat aag ggt gtt ttt gca aca cac ctt tct caa gag tac Cys Thr Asp Asp Lys Gly Val Phe Ala Thr His Leu Ser Gln Glu Tyr | 180 | 185 | 190 | 934 |
| cag ctg gca gct gaa aca ttt aat ttg acc cag tct cag gtg tgg gat Gln Leu Ala Ala Glu Thr Phe Asn Leu Thr Gln Ser Gln Val Trp Asp | 195 | 200 | 205 | 982 |
| ctg tct tat gaa tcc atc aac tac atc ttt gct tct gac agc acc aga Leu Ser Tyr Glu Ser Ile Asn Tyr Ile Phe Ala Ser Asp Ser Thr Arg | 210 | 215 | 220 | 1030 |
| tct gaa ctg agg aag aaa tgg aat cac ctg aag ccc aga gtg tta cat Ser Glu Leu Arg Lys Lys Trp Asn His Leu Lys Pro Arg Val Leu His | 225 | 230 | 235 | 1078 |

| | |
|--|------|
| att taa gctataatga ggtgaactac ttctgagttat gtgtttcaat caagttcctg | 1134 |
| Ile * | |
| 240 | |
| ccatatccca cttagtaaaa cagtccacca ctccttgaa gcatacgaaac caagttcctt | 1194 |
| gggctctatc accagcacct tacacatggc aggtactcg taaatacgtg tcttcaactg | 1254 |
| actcacaaggc tctcaggtgc ttactgggtg ggacttgact gttgttgcta attaaatccc | 1314 |
| cattccacca gtgattatttgc tgactcagca gtcctccctt attagtgtatc ataaaatttc | 1374 |
| agggaaatcg aagtttctca tcagggaaatg ttttggaaattt actagtataa agttaggaaa | 1434 |
| gtggggaaat taggttactg ccgagacctt taagccttctt aaacagctttt atattttatt | 1494 |
| gtgcataactt taatcagact cccttcactc gctttaagttt tttaaaagta ttccccagcc | 1554 |
| ggatgtgatg gctcatgcct gtaatcccag cactttggaa agccaaagtgc ggcagattgc | 1614 |
| ttgatcctag gagttcagta gcagcctagg caacatggag aaaccctgtc tctacaaaaaa | 1674 |
| caaaaaaaca aaaaaccgga aatttagtcag gcacgggtgtt acacacctgtt agtcccagcc | 1734 |
| accagggagg ctaaggtggg aggagacctg atcccagggg atgtttgagg ctgcagttag | 1794 |
| ctggagtgca gtgacatgtatcacatcacatc tgcaatgggg agttttaaaaa cagctttat | 1854 |
| tacattntct ttgtggaaag ctgatttcta ccttaga | 1891 |